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Perceptions of Vultures by the Indians and Early Texans

Stanley D. Casto

Department of Biology, University of Mary Hardin-Baylor,
Belton, Texas 76513

ABSTRACT.—The native Indians of Texas regarded vultures as useful creatures which they incorporated into their myths and folklore. Early Texans perceived vultures as serving a beneficial role in the removal of refuse and carrion from both the cities and the countryside. A change in attitude occurred in the early 1900's when stockraisers lobbied against protection for vultures because of their alleged transmission of anthrax. Vultures are today protected by state law and they are no longer persecuted as carriers of disease. However, progress in sanitation and garbage disposal has greatly altered their historical function and the way in which they are perceived by humans.

Texans have never completely resolved their conflicting emotions regarding vultures. On one hand, the presence of vultures is an uncomfortable reminder of the mortality of all living things whereas, on the other hand, their removal of carrion and refuse is perceived as a useful service. In addition, most Texans have never been able to distinguish between the Turkey Vulture and the Black Vulture, most commonly referring to both species simply as "buzzards." Although most of the early references to vultures express a positive perception, a definite change occurred in the early 1900's when it was alleged by stockraisers that "buzzards" were responsible for the spread of anthrax and perhaps other contagious livestock diseases such as blackleg and hog cholera. The fear and hatred resulting from this allegation ultimately resulted in the slaughter of untold numbers of vultures throughout the stock-raising regions of Texas.

Perceptions and Mythology of the Indians

Little is known concerning the perceptions of the native Texas Indians regarding vultures. The Karankawa Indians of the Texas Coast reportedly regarded the Turkey Vulture as a useful bird which was never killed.[1] On the other hand, when Jean Louis Berlandier visited Texas in 1828 he obtained two feather ornaments from the Comanche Indians that were made of clipped Turkey Vulture feathers.[2]

Both positive and negative perceptions of vultures are expressed in the folklore of the Alabama-Coushatta Indians. In one story, the "Buzzard" is given a major role in the creation of the surface features of the earth. According to this myth, as the buzzard flew just above the surface of the soft earth the downsweep of his wings made the valleys and the upsweep of his wings formed the hills and mountains. While gliding without flapping his wings the buzzard made level country and plains. In a second story, the buzzard helps the wren place the sun in the sky for which he is rewarded by being allowed to eat all of the animals that have died. In still another story, the turkey buzzard pretends to be a physician capable of treating an injured rabbit but instead kills and eats the rabbit. Upon discovering this deceit, the bear who is a friend of the rabbit orders that the buzzard be shot

with a blowgun. The darts from the blowgun strike the buzzard in the head where they enlarge the buzzard's nostrils producing the size and shape that is seen today.[3] In the mythology of the Lipan Apaches the buzzard is afforded only a minor role as a helper of the coyote after he has stolen fire from the firefly people.[4]

Positive Perceptions of Early Texans

Vultures were apparently extremely abundant in early Texas. Orceneth Fisher, who visited Texas in 1840, related the story of a rancher who killed and skinned a beef on the prairie. No vultures were in sight as the rancher returned to his home and ordered a servant to fetch the beef. Although less than an hour elapsed before the servant arrived back at the carcass, it was found to consist of little more than a pile of bones. Fisher believed that the buzzards had committed a great wrong yet he went on to explain that the locals considered them to be "very innocent, and [they] are left undisturbed by the people."[5]

In 1844 while exploring the region west of San Antonio, Prince Carl of Solms-Braunfels noted that the buzzard "takes care of and disposes of all dead animals and is therefore a promotor of health."[6] In 1846 another German, Ferdinand von Roemer, visisted the New Braunfels area where the occurrence of the buzzard was noted with the passing comment that it was punishable by fine in Louisiana and Texas to kill birds of this type.[7]

In 1884, G. B. Benners observed turkey vultures in the yards of homes in Corpus Christi where they came to eat the refuse that was thrown out for them. Benners further noted that the Turkey Vulture was protected by law and that anyone who shot one would "find himself in hot water." And, most amazingly, Benners also reported that the local Negroes ate nestling turkey vultures.[8] In 1884, J. L. Hancock noted that the black vultures in the vicinity of Corpus Christi had "made their appetites of great service" by cleaning the environment of animals that had died of disease and other causes.[9] In 1902, A. E. Schutze reported that the favorite haunt of both turkey and black vultures in central Texas was the tall trees around slaughter houses where they would patiently wait for the refuse that was thrown out to them by the butchers.[10] In 1906, T. H. Montgomery, professor of zoology at the University of Texas, described turkey buzzards and black vultures as historically constituting the only efficient health department in many cities of the southern United States. He further praised their value in doing away with putrefying carcasses and the subsequent prevention of contamination.[11]

The Alleged Transmission of Anthrax by Vultures

During the early 1900's the public perception of vultures began to change as a result of the allegation that they played a major role in the transmission of anthrax. Anthrax was first recorded in Texas in 1860 with sporadic outbreaks in subsequent years and high incidences being reported in 1904, 1908, and 1914–1916.[12] The disease is caused by the soil bacterium, *Bacillus anthracis,* which may be spread by either the vegetative cells or the resistant spores. Intuitively, many ranchers speculated that vultures that had fed on animals that had died of anthrax might pass the organism through their digestive tracts to be released into the environment.

Suggestions that vultures might be involved in the transmission of anthrax began to appear in the media in late 1902. The reknown naturalist, Henry Phile-

mon Attwater, who was then working as Agricultural and Industrial Agent for the Southern Pacific Railroad in Houston, collected several of these articles and sent them to Dr. T. S. Palmer of the Biological Survey for his appraisal.[13] Palmer turned the issue over to his assistant, A. K. Fisher, who expressed the opinion that it had "not been proven that turkey vultures or black vultures are carriers of contagious diseases."[14]

Much of the evidence that vultures might transmit anthrax centered around experiments performed by the State Veterinarian, Dr. W. A. Knight.[15] Attwater believed Knight to be a "reasonable and intelligent man" who would fairly evaluate the evidence and he suggested to William Dutcher, Chairman of the A.O.U. Committee on Bird Protection, that he write to Knight and obtain his professional opinion for the record.[16] In his correspondence with Knight, Dutcher admitted the possibility that the Turkey Vulture might transmit anthrax, but referred to the good done by the species and the need for more study before the bird was denied protection.[17] In his reply on 19 January 1903, Knight described himself as a lover of the native birds and expressed his desire to see the passage of any law that would protect them. However, with regard to the Turkey Vulture, Knight maintained that he had reason to believe that it was a disseminator of disease and parasites of domestic animals. He did, however, concede that his experiments were incomplete and that he was willing to spare the vulture if he could not prove his theory correct. Knight then raised the secondary issue that vultures were a potential menace to the helpless young of domestic animals.[18] Dutcher's reply to Knight carried the assurance that if scientific study could prove the Turkey Vulture to be harmful that he would request the species to be exempted from protection.[19]

During February 1903, at the request of stockmen around Corpus Christi, Senator J. C. Willacey introduced a bill that would allow buzzards to be killed in that area. In response to this development, Attwater wrote to Senator Willacey enclosing opinions of the experts and raising the point that, even if all of the buzzards were exterminated, anthrax would probably still continue to be spread by other species of carrion-eaters as well as by flies and other insects.[20] Senator Willacey's bill and the political influence of the stockmen had the effect of a proviso being included in the 1903 game law which excluded buzzards from protection.[21]

The most influential and vehement spokesman against the buzzards was Robert J. Kleberg of the King Ranch. At the 1903 meeting of the Interstate Association of Live Stock Sanitary Boards, Kleberg recounted the experiments of the State Veterinarian claiming that they proved that vultures spread anthrax in their excrement after feeding on infected animals. Kleberg noted that there was no problem if the animals that had died could be burned or buried immediately. However, on the large ranches this was often impossible since the dead animals might not be found for several days during which time the carcass would be eaten by the vultures. Kleberg then proclaimed that Texans had taken the first step in solving the anthrax problem by repealing the law that protected the buzzards. As justification for the persecution of buzzards, Kleberg argued that, in spite of their positive role as scavengers, the buzzards did not obey the quarantine rules and therefore they were "not needed."[22] In an article in the *San Antonio Express* on 21 September 1903, Kleberg again charged buzzards with spreading anthrax ending his accusation with the suggestion that the motto of every stockraiser should

be "Kill the buzzards." The intensity of Kleberg's hatred is difficult to understand when, even by his own admission, he had not heard of a case of anthrax in his part of the state for a long time and that there was no present occasion for alarm.[23]

H. P. Attwater was very disturbed by Kleberg's comments that all buzzards should be killed and he immediately penned a reply which, for political reasons, he had signed by one of his friends. In this letter which appeared in the *San Antonio Express* on 13 October 1903, Attwater noted that several other animals were potential vectors and that it had not been conclusively proven that buzzards were carriers of anthrax. In addition, it was pointed out that buzzards were still considered to be of much use in many parts of the country.[24]

Years later, Edgar Kincaid reminisced that few birds were more hated by stock-raisers than the Black Vulture since it was believed both to spread anthrax and to be a menace to the newborn of domestic animals.[25] "Buzzard control" was accomplished by both traps and poison. The traps were generally circular in shape, varying in diameter from 10–40 feet and in height from 4–6 feet. A V-shaped tunnel in one side provided the opening by which the birds entered the trap, whereas a door on one side was used for placing the bait and removal of trapped birds. Dead livestock, rabbits, armadillos and offal were commonly used as bait. Compound 1080 (fluoro-acetic acid) was the poison of choice being injected into dead rabbits which were then placed around the water holes frequented by the birds.

The number of birds killed by trapping and poisoning was phenomenal. From replies obtained from forty-six landowners during 1952–1953, it was conservatively estimated that 100,000 vultures had been trapped within recent years. Many ranchers indicated that "after the first 500, 1,000, etc., we quit counting." Poisoning was even more effective and was used to eliminate the vultures "en masse."[26]

In Defense of Vultures

In April 1913, W. L. McAtee of the Bureau of Economic Ornithology summarized the evidence then available regarding the role of vultures in the transmission of livestock diseases.[27] In experiments performed in Panama by S. T. Darling and L. B. Bates, buzzards were fed chopped meat mixed with anthrax bacilli and spores and, in a variant procedure, anthrax cultures were introduced directly into the stomach of the birds via a catheter. Examination of the feces at regular intervals found no anthrax organisms present. After several days the birds were sacrificed and examination of their lower digestive tracts failed to reveal the presence of the organism.[28] A similar experiment conducted by Harry Morris of the Louisiana Agricultural Experiment Station confirmed these results concluding that "the anthrax bacteria do not pass through the digestive tract of the buzzard and consequently are not disseminated in the droppings of these scavengers." Morris did not, however, rule out the possibility that buzzards might spread those organisms that adhered to its feet, plumage, or beak. This mechanism of spread was, however, considered to be of a minor and insignificant nature.[29]

If vultures were not responsible for the spread of anthrax, then what animals were? This question was answered on 12 December 1914 when the Texas state health officer announced that his department had "conclusively proved" that the common gray horsefly was the chief disseminator of anthrax among herds as well as the principal carrier of the infection to new localities.[30] Thus, it would seem

that if science had not completely exonerated the vultures, it had at least shifted the major focus to other species.

H. P. Attwater played a major role in the education of the public regarding vultures. During his long years as Agricultural and Industrial Agent for the Southern Pacific Railroad, he had won the confidence of farmers and ranchers throughout the state. In addition, he was widely respected among scientists for his rational and measured approach to the evaluation of controversial issues.

In December 1916, Attwater presented a paper to the Scientific Society of San Antonio regarding the threats facing Texas wildlife. With reference to vultures, Attwater alluded to their persecution and then reviewed the evidence that their involvement in the spread of anthrax was minimal and there was little or no evidence that they might be involved in spreading hog cholera.[31]

In the summer of 1919 Attwater carried his message directly to the farmers and stockmen, publishing in *The Semi-Weekly Farm News* what was undoubtedly the most eloquent and rational defense of vultures yet written.[32] Attwater first recalled the appreciation and protection that was afforded vultures by previous generations for their role in sanitary affairs. He then went on to describe the aid given to stockmen by circling vultures in finding the whereabouts of weaklings, cripples, fallen, bogged, wounded, starving and perishing animals in the dense chaparral and in the rough, rocky cattle pastures where immense thickets of brush cover vast areas of the range. Similar aid was also provided to law enforcement officers in finding murder victims, thus leading to the arrest and punishment of the murderers. Most importantly, vultures were lauded for their destruction of immense numbers of fly eggs, maggots, screw-worms and other parasites during their feeding.

Attwater then reviewed all of the scientific evidence suggesting that other carrion-eaters and flies were of much greater importance in the transmission of anthrax than were buzzards. He closed by expressing the opinion that vultures should be given a "square deal" and that those who advocated their extermination could better spend their energy by working for a law that would require the burial or destruction of diseased carcasses. And, that the detractors of vultures should pay more attention to the destruction of stray cats, mongrel dogs, rats, roaches, flies and other insects and other "vermin" and "varmints" which were much more guilty of spreading contagious diseases than the buzzard.

Many people still believed that buzzards should be protected. While visiting Austin in 1916, Florence Merriam Bailey was impressed by the attitude of the people toward vultures. When a question arose as to whether a Black Vulture had eaten a snake, it was suggested that the bird should be killed to settle the issue. The citizen to whom this proposal was addressed immediately replied, "You'd have the corporation after you if you did!"[33]

Vultures Again Under Attack

In 1932 the Bureau of the Biological Survey concluded that local control of vultures might occasionally be warranted where they were a menace to newborn pigs, calves, lambs and kids. However, it was further concluded that there was no evidence that vultures were major carriers of livestock disease and that there was no reason to encourage their general destruction.[34]

In spite of the findings of the Biological Survey, by 1934 vultures were again

under official attack based on "experimental findings" that virulent spores had been found in the droppings of birds that had fed on the carcass of an animal that had died of anthrax.[35] This report, widely circulated in *USDA Farmer's Bulletin* 1736, served to validate the popular belief that buzzards were the major villains in the spread of this disease. Vultures were further indicted by an anecdotal account in the April 1956 issue of *The Auk* which claimed that they were responsible for the spread of anthrax at a stock ranch in Chile.[36] The *Yearbook of Agriculture* for 1956 listed several carrion-eating animals and "especially buzzards" as involved in the spread of anthrax.[37] Thus, buzzards were now officially designated as guilty even though the first experiments performed in Panama and Louisiana had concluded that the anthrax organism was not passed in their excrement and that their role in the transfer of the disease was insignificant.

The position of the department charged with the protection of Texas wildlife straddled both sides of the controversy. J. G. Burr, Director of Public Relations for the Texas Game, Fish and Oyster Commission, wrote in 1936 of the "good work" that vultures do in cleaning up the large numbers of dead animals along the highways.[38] However, in contrast to this recommendation, "Hunting in Texas 1963–1964," a publication of the Parks and Wildlife Department, reminded hunters that vultures and several other species of nongame birds were not protected and that their hunting [i.e. killing] could "provide a good amount of sport." The outrage created by this inflammatory publication prompted Richard O. Albert, President of the Texas Ornithological Society, to urge that all members of the society write to Governor John Connally requesting that this brochure be taken out of circulation immediately.[39]

To what extent are vultures involved in predation and the transmission of livestock diseases? The most current assessment of this question concludes that (1) vultures are not significant vectors of disease; (2) that vultures render a service in excess of their limited predatory habits although on rare occasions it may be justifiable to reduce a local population of vultures; and (3) that vultures should be afforded the protection that they enjoyed in previous years. All evidence considered, there is no justification for "any form of eradication" of either the Turkey or Black Vulture.[40]

Legal Protection of Vultures

Ferdinand von Roemer noted in 1846 that vultures were protected in both Louisiana and Texas. Since there are no state game laws from this period, it is assumed that any protection afforded vultures was by local ordinances. In 1879 the state legislature adopted a penal code that granted protection to the "buzzard or carrion-crow" as well as a variety of other "harmless" birds. The killing of these birds constituted a misdemeanor with a fine of not less than five nor more than twenty dollars.[41] In 1881 the code was amended to reduce the maximum fine for killing a buzzard to fifteen dollars.[42]

The general game law of 1897 does not mention buzzards and other nongame birds and it is assumed that they retained their protected status under the earlier penal code. Buzzards were, however, specifically excluded from protection by the game laws of 1903 and 1907. Article 875 of the penal code which names those species exempted from protection was amended in 1939 to identify vultures or buzzards as "harmful," a label that is also used in the amendments of 1967 and

1969.[43] A second amendment in 1969 repealed Article 875 thereby once again including vultures within the protection of the law.[44] Thus, after over sixty years of persecution and the slaughter of perhaps hundreds of thousands of birds, vultures were finally restored to the good graces of society.

Perceptions of Modern-day Texans

What are the perceptions of vultures by modern-day Texans? Certainly vultures are no longer condemned and persecuted for their minor role in the transmission of anthrax. On the other hand, neither are they regarded as the friendly garbage man or representative of the city sanitation department. In some public campgrounds, e.g., Rio Grande Village in the Big Bend National Park, they gather in large numbers to feed on refuse and handouts, much to the delight of photographers and tourists. To some people vultures may appear ugly and repulsive, but to others they are a fascinating form of birdlife worthy of preservation in spite of the fact that time and progress have altered their historical relationship with humans.

Acknowledgments

I am grateful to Katherine J. Adams of the Barker Texas History Center for making me aware of the microfilm copy of the Audubon Society correspondence from Texas. And, to Roseanne Lawler for stimulating my interest in vultures by wanting to stop and examine every dead creature found by the roadside. This study was supported by a Summer Development Leave granted by the University of Mary Hardin-Baylor.

Footnotes and References

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2. Jean Louis Berlandier. *The Indians of Texas in 1830.* John C. Ewers, editor, Smithsonian Institution Press, 1969 [see pp. 179–180 and 184].
3. Howard N. Martin. 1977. *Myths and Folktales of the Alabama-Coushatta Indians of Texas.* Austin: Encino Press [see pp. 3, 6–7 and 40].
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13. Mention of these clippings is made in a letter from Attwater to Wm. Dutcher dated 8 Jan. 1903. This letter and the others cited below are found in the microfilm of the General Correspondence of the Audubon Society Relating to Texas, 1900–1910 in the Barker Texas History Center.
14. Letter from A. K. Fisher to Wm. Dutcher dated 27 Dec. 1902.
15. W. A. Knight was born in Ohio in 1858 and educated at Chicago Veterinary College. He began his practice of veterinary medicine in Texas in 1891. *The Standard Blue Book of Texas,* 1914–1915, p. 59.
16. Letter from Attwater to Dutcher dated 8 Jan. 1903.
17. Letter from Dutcher to Knight dated 14 Jan. 1903.
18. Letter from Knight to Dutcher dated 19 Jan. 1903.
19. Letter from Dutcher to Knight dated 26 Jan. 1903.
20. Letter from Attwater to J. C. Willacey dated 3 March 1903.
21. *General Laws of the State of Texas,* Regular Session of the 28th Legislature, 1903, p. 226.
22. Kleberg's address before the Interstate Association of Live Stock Sanitary Boards is quoted in Louise M. Senseman. 1962. Anthrax in Texas, 1865–1960. Thesis, Univ. of Texas at Austin [see p. 50].
23. "Shoot the Buzzards," *San Antonio Daily Express,* 29 Sept. 1903, p. 10, col. 3.
24. "A Plea for the Buzzards," *San Antonio Daily Express,* 13 Oct. 1903, p. 10, col. 2. The name of Attwater's friend is unknown since the letter is signed with only the initials "C. G. C."
25. Edgar Kincaid in Harry C. Oberholser. 1974. *The Bird Life of Texas,* Vol. I. Univ. Texas Press [see p. 204].
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33. Florence Merriam Bailey. 1916. Meeting Spring Half Way. *Condor* 18:151–219 [see p. 152].
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36. Dillman S. Bullock. 1956. Vultures as Disseminators of Anthrax. *Auk* 73:283–284.
37. C. D. Stein and G. B. Van Ness. 1956. Anthrax. In *Animal Diseases, The Yearbook of Agriculture* 1956 [see p. 230].
38. J. G. Burr. 1936. *Brief Studies in Texas Bird Life.* Booklet No. 10, Texas Game, Fish and Oyster Commission, 82 pp. [see p. 20].
39. Newsletters of the Texas Ornithological Society for November and December, 1963.
40. Frank A. Hayes. 1969. Vultures—Significant Disease Carriers? *Virginia Wildlife* 23:12.
41. Other birds protected by the 1879 penal code include the "mockingbird, whippoorwill, night-hawk, blue-bird, red-bird, finch, thrush, linnet, wren, marten, swallow, bobolink, cat-bird, non-pareil, scissor-bird, [and] sparrow." See "Offenses Relating to the Protection of Fish, Birds and Game," Chapter 5, Article 429 in George Clark. 1881. *The Criminal Laws of Texas,* pp. 137–139.
42. *Revised Penal Code and Code of Criminal Procedure and Penal Laws,* 1889, Pt. 1, Penal Code, p. 144.
43. Labeling vultures as "harmful" is found in the following sources: *General Laws of the State of Texas,* Regular Session of the 46th Legislature, 1939, p. 827; Regular Session of the 60th Legislature, 1967, p. 108; Regular Session of the 61st Legislature, 1969, p. 1563.
44. *General Laws of the State of Texas,* Regular Session of the 61st Legislature, 1969, p. 1650.

A Breeding Population of Zebra Finches (*Poephila guttata*) in Central Texas

Joye E. Johnson

4501 Hickory Road, Temple, Texas 76502

ABSTRACT.—A released or escaped population of zebra finches (*Poephila guttata*) in a residential area of Temple, Bell County, Texas, has been monitored for approximately 2 years. Initially, 20 individuals were observed in an area of new residential construction. The population now inhabits a more heavily vegetated area and numbers of individuals are more difficult to determine. Although numbers of individuals possibly have declined, nests, successful brooding, and juvenile birds have been observed. Climate has probably not been stressful to the birds. The long-term survivability of the population is questionable.

The zebra finch is the best known of all Australian Finches because of its popularity as an aviary bird (Harman and Vriends 1978). It was first described in 1817 by Viellot as *Fringalla guttata.* Since 1817, the name has undergone six changes (Roberts 1981), and is currently listed as *Poephila guttata* as recommended by the Royal Australasian Ornithologist Union. The zebra finch is found throughout Australia in woodland and grassland except in wetter areas. Although there is considerable geographic variation, the various continental populations are not differentiated into subspecies. Droughts force birds to move into new areas resulting in frequent interbreeding of populations. All zebra finches outside Australia and the neighboring Lesser Sunda Islands are from stocks bred in captivity (Roberts 1981).

The zebra finch is 10 to 11.5 cm long. Adult males have a reddish-orange beak, gray back, chestnut ear patch, vertical black and white streaks on the face, striping across the throat and breast, and chestnut flanks with white speckles. The tail is barred black and white and the legs are red. The female has a fawn-gray breast, lacks the ear patch and marking on the flanks, and the red legs and beak are a little lighter in color. Immature birds have black beaks.

Breeding takes place all year long, regardless of the season. In the wild, nesting frequently begins immediately after rain because the birds must capitalize on short-term food supplies. Overzealousness and impatience in breeding frequently result in rapid desertion of eggs. Parents sometime separate clutches with a new layer of nesting material (Bates and Busenbark 1970). Zebra finches are highly social and get along well with other species.

A released or escaped population of zebra finches has been monitored in a residential area in Temple, Bell County, Texas, since September 6, 1986. A flock of 20 zebra finches was first observed by the author in an area of new residential construction adjacent to a grassy field. The birds were first seen flying into a small green ash tree (*Fraxinus pennsylvania* var. *subintegerrima*) about 3 m high, then across the street into a yard and another small green ash. The birds could be seen in this same area daily, eating seeds of St. Augustine grass (*Stenotaphorum se-*

cundatum). Most of the flock were adult males and juveniles. Of the three adult females one was more fawn colored than gray. Often the flock was located by finding a large flock of house sparrows (*Passer domesticus*) which had begun to build nests in the eaves of one of the new vacant houses. The sparrows and the finches would be foraging together in the grass.

Two nests were subsequently found in the very center of two small green ash trees about 100 m apart. The nests were about 1.75 m above the ground, and only one nest was active. The active nest was well constructed of dried twigs, grass stems, and thick white string. Of particular interest was the mummified body of a barely feathered nestling of uncertain species incorporated into the nest as part of its external structure. The nests were difficult to see into because they were covered and had side openings. The active nest contained 5 eggs, which were brooded by both the male and the female.

The second nest appeared to be layered as several nests in a series of nests and looked older. Three finches were observed to exit this nest on one occasion. That was the only activity observed and eggs were never found in the nest.

On October 2, 1986, the eggs were still in the active nest but the nest had been tampered with. The top was smashed in, one egg broken, and the parents apparently never returned to the nest. The flock of zebra finches disappeared from this area shortly thereafter and have not been observed there since.

They were soon located again in a settled residential area about ½ km from the original sightings. This new area is quiet with little traffic and characterized by mature hardwoods of various species and tall, dense ligustrum (*Ligustrum lucidum*) hedges. An uncertain number of zebra finches visited a covered feeder through the winter of 1986–87, often feeding with other species of birds and remaining under the cover for long periods.

During May, 1987, as many as six birds were seen at a time and more were heard in the dense hedges separating yards. On October 22, 1987, an effort was made to get a more exact count of the birds. A number were heard in a dense hedge of honeysuckle (*Lonicera japonica*) and ten were seen in the St. Augustine grass. These included adults and several young. Two adult males were pursuing a female. During the winter of 1987–88, the birds were observed daily at a feeder. The seed in the feeder was consistently a commercial mix of milo, sunflower seed, millet, and wheat. In May, 1988, both young and adult birds were observed. On July 24, 1988, 9 birds were seen and included adult males and females and 3 young birds. One adult female was being pursued by two adult males. Other birds seen to feed in association with the zebra finches were house sparrows (*P. domesticus*) and house finches (*Carpodacus mexicanus*). Other species present nearby were blue jay (*Cyanocitta cristata*), Inca dove (*Columbina inca*), starling (*Sturnus vulgaris*), Carolina chickadee (*Parus carolinensis*), mockingbird (*Mimus polyglottos*), Carolina wren (*Thryothorus ludovicianus*), and hairy woodpecker (*Picoides villosus*).

The zebra finches were always heard before they were seen approaching the feeder. Their approach was always from the direction of a very dense tall ligustrum hedge along the back fence of an adjacent yard. A nest has not been located in the hedge.

Several residents were aware of these birds and have contributed their observations. The birds took advantage of the well-stocked feeder mentioned above,

but evidently were not dependent thereon. One resident reported that during spring and summer 1987 the finches raised 3 broods in a hanging basket of fern on her front porch. At one time the nest contained 12 eggs but not all of them hatched.

The long-term effects of Texas weather on the survivability of these birds is still open to question. The winters of 1986–87 and 1987–88 were unusually mild in Central Texas. Data obtained locally from the Texas Agricultural Extension Service's Blackland Research Center show that temperatures dropped to freezing or below only 16 times in 1986–87 and 31 times in 1987–88. On only one of those occasions were those temperatures maintained for as long as 24 hours. In Australia, native stocks of this species are adapted to similar temperature regimes. Mean temperatures are highest in the northern region and coolest in the south. Summer (December to March) temperatures of 38°C or greater are not uncommon. Few areas are immune to occasional frost but low temperatures are uncommon. Seasonal variations in temperature are generally small, although unusual deviations from the mean may occur.

Precipitation may be of greater significance to natural populations of zebra finches than temperature. Rainfall in Australia tends to be seasonal and generally scarce. Seventy percent of the Australian continent averages less than 50 cm of rainfall annually and 40% receives half that amount. Regional precipitation is highly variable, however, with drought or flood conditions not uncommon.

Central Texas is a more mesic environment than that to which natural stocks of zebra finches are acclimated. During 1986, local precipitation totalled 119 cm. In 1987, there were 93 cm of rainfall, and during the period of January through July, 1988, local precipitation totalled 44 cm. These precipitation data were also provided by Blackland Research Center.

It is not anticipated that normal precipitation in Central Texas will in itself adversely affect the long-term success of the population reported on here. Keast (1959) identified rainfall as a factor in stimulating breeding activity in zebra finches in arid areas and McGilp (1944), as reported by Serventy (1971), reported successful populations of zebra finches in humid parts of Australia. Further, Serventy (1971) described zebra finches as highly opportunistic breeders, and very successful in favorable habitats.

The significance of these observations is that an escaped or released population of zebra finches is surviving and breeding successfully. The age and current size of the population is unknown although undoubtedly small. The fact that the finches are being seen in groups of 10 or less suggests, but is not conclusive, that the initially observed numbers have declined. Their present locality provides much more cover and greater diversity of foraging opportunity than where they were first observed. However, their long-term survivability is uncertain. Serventy (1971) observed that this adaptable species may build up to vast numbers and then succumb dramatically when conditions become unfavorable.

Escaped or exotic species reported by birders are not uncommon occurrences. Slater et al. (1986) list eight finches as introduced species that breed regularly in natural situations in Australia. The nesting monk parakeets (*Myiopsitta monachos*) in Austin are well-known to Texas birders. Morlan (1986) noted the need for monitoring several species of parrots in California some of which might become established.

Whether or not the zebra finches discussed here will become permanently es-

tablished is highly questionable. They have, however, maintained a presence which included successful reproductive activity over a two year monitoring period.

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The Birds of the Sanders Cove Pines

Robert E. Wilson

Department of Biological Sciences, East Texas State University,
Commerce, Texas 75428

ABSTRACT.—An analysis of a relict pine-oak forest in northern Lamar County, Texas was conducted in 1984. This work was the first of a series of studies on ecology of the area. A total of 97 bird species were recorded. Sixteen of these were considered to be permanent residents, ten were summer residents, and 17 were winter residents. The list includes three species not previously reported in the area.

A vegetational analysis of a relict pine-oak forest in northern Lamar County, Texas was conducted in 1984 (Wilson and Hacker, 1986). This paper was the first of a series of studies on this community and on the ecology of the northeastern portion of the state. No studies of the avifauna of this community have been found. Adams (1938), Tarter (1940) and O'Neil (1957) prepared checklists of the birds of the Commerce, Texas area which is located on the blackland prairie, about 90 kilometers southwest of this forest. These were cited by Oberholser and Kincaid (1974), who provided additional records for northeast Texas. The uniqueness of this site calls for a detailed study of its avifauna.

The commuity is a mature climax forest dominated by short-leaf pine (*Pinus echinata* Mill.) and white oak (*Quercus alba* L.). The Sanders Cove Pine forest is isolated from the eastern pine-oak forest by about 40 km and is located about 18 km north of Paris, Texas and one km west of U.S. Highway 271. It is almost entirely on U.S. Army Corps of Engineers property and represents the western limit of the pine-oak forests of northeast Texas (Wilson and Hacker, 1986). Figure 1 shows the location and extent of the Sanders Cove Pines.

The area has a temperate climate, with hot summers and moderate winters. Average daily high and low temperatures are 23° C and 11° C, respectively. Record high and low temperatures are 44.5° C in 1954 and −19° C in 1951 (Ressel 1979). The average annual rainfall is 113 cm, with a relatively uniform distribution throughout the year (Ressel 1979). The summer of 1986 was extremely dry, with no measurable precipitation from early June to mid-September, although this probably did not affect the avian species which were seen.

Methods

This investigation was started on January 7, 1985 and was continued until December 30, 1985. About 250 hours were spent in observation. Most observation periods were in the early morning. Some records have also been included from 1984 and 1986. The intensively studied area was examined, as far as possible, at weekly intervals. A regular walking circuit of about 10 km requiring three to four hours was covered on each visit. Frequent stops were made and each species was recorded on a daily checklist by number seen or heard. The remainder of the

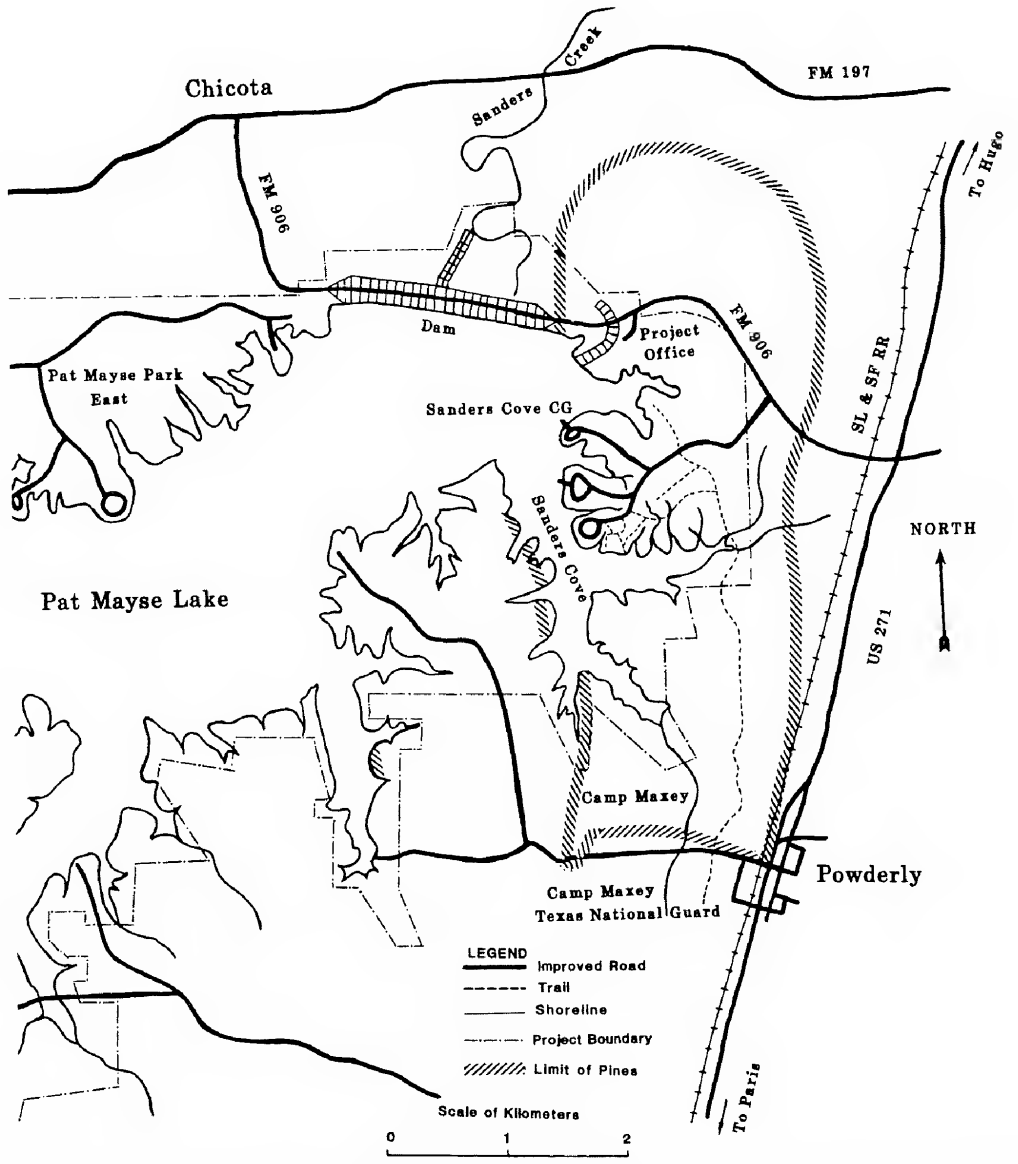

Fig. 1. The northeastern portion of Pat Mayse Lake, showing access roads and the location of the Sanders Cove pine-oak forest.

study area was examined about once every four weeks, usually requiring about six hours. No observations were made during July. Figure 2 shows the area studied in this report.

Terminology is based on the sixth edition of the American Ornithologists' Union *Checklist of North American Birds* (American Ornithologists' Union 1983).

Although all species reported are based on sightings, no doubtful or questionable species are included. With only one or two exceptions, all species were familiar to the author, and most species were indigenous to the area.

Results and Discussion

The results of this study are presented in Table 1. Eight species were not observed in the community in every month during which they are reported. If seen within

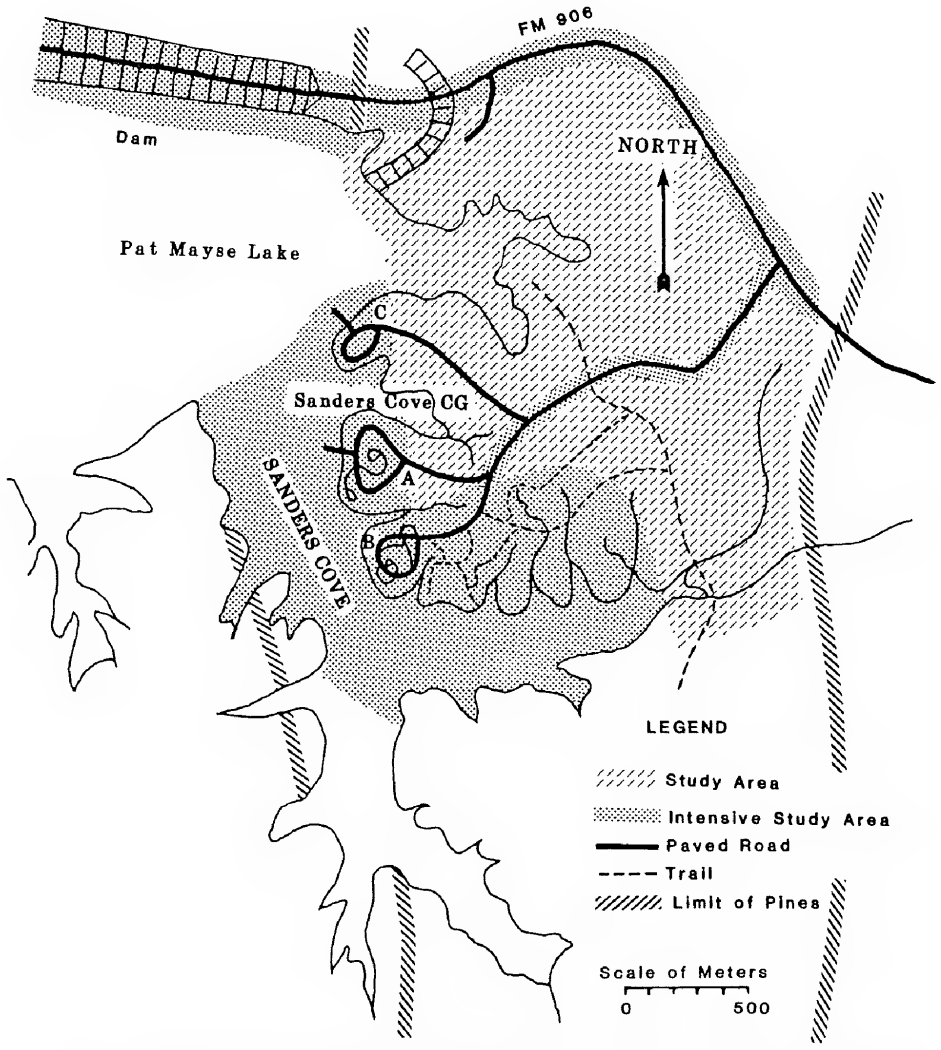

Fig. 2. The location of the study area in the Sanders Cove pine-oak forest.

15 km of the community during those months, these eight species were presumed to have been present within the community at the same time. Breeding records given are based on observation of nesting or of feeding of newly fledged young.

A total of 97 species were recorded (see Table 1). Sixteen of these were considered to be permanent residents, ten were summer residents, and 17 were winter residents. Sixteen species were observed only during the spring and fall migrations and are considered to be migrants in the area. Forty-two species were not seen with enough regularity to categorize. Eleven species are known to have bred in the Sanders Cove Pine community during 1985.

Species which have not previously been reported in the area are the Common loon (*Gavia immer* Brunnich), the Eared grebe (*Podiceps nigricollis* Brehm.), and the Prairie falcon (*Falco mexicanus* Schlegel). Only a single Common loon was seen at Sanders Cove, but they were also observed in Hunt and Rains counties during the winter of 1986. At least three Eared grebes were seen during all observations in January, February and March. The Prairie falcon has been reported in Hunt county, but was last seen prior to 1940.

The small number of shorebirds observed is due to the lack of suitable habitat

Table 1. Birds observed in the Sanders Cove pine-oak community.

Species	Months										
	Jan	Feb	Mar	Apr	May	Jun	Aug	Sep	Oct	Nov	Dec
Gaviidae											
Common loon (*Gavia immer*)											1
Podicipedidae											
Eared grebe (*Podiceps nigricollis*) WR	U	U	U								
Pied-billed grebe (*Podilymbus podiceps*) WR	C	C	C					C	C	A	C
Phalacrocoracidae											
Double-crested cormorant (*Phalacrocorax auritus*)	+	A	A	A				A	VA	+	A
Ardeidae											
Great blue heron (*Ardea herodias*) PR	U	U	+	+	+	+	U	U	U	C	U
Little blue heron (*Egretta caerulea*)								1			
Green-backed heron (*Butorides striatus*) SR					1	1			1		
Anatidae (Anserinae)											
Snow goose (*Chen caerulescens*) WR	A	VA	A								
Canada goose (*Branta canadensis*)	2										
Anatidae (Anatinae)											
Mallard (*Anas platyrynchos*) WR	U	A									U
Northern shoveler (*A. clypeata*) M		U							A	U	
American wigeon (*A. americana*) M		U									
Ring-necked duck (*A. collaris*) M			U								
Bufflehead (*Bucephala albeola*) M		U									
Common merganser (*Mergus merganser*) M											
Red-breasted merganser (*M. serrator*) M		U						U		U	U
Cathartidae											
Black vulture (*Coragyps atratus*)						1					
Turkey vulture (*Cathartes aura*) PR	C	C	C	C	C	C	C	C	A	C	C
Accipitridae (Pandioninae)											
Osprey (*Pandion haliaetus*)								1	3		
Accipitridae (Accipitrinae)											
Bald eagle (*Haliaeetus leucocephalus*) WR	1	1	6					1			1
Northern harrier (*Circus cyaneus*) WR	1	1									
Sharp-shinned hawk (*Accipiter striatus*) WR										1	1
Broad-winged hawk (*Buteo platypterus*)								1			
Swainson's hawk (*B. swainsoni*)							1				
Red-tailed hawk (*B. jamaicensis*) WR	U	U	U	U			U				
Falconidae											
American kestrel (*Falco sparverius*)			1					1			
Prairie falcon (*F. mexicanus*)					1						
Phasianidae (Odontophorinae)											
Northern bob-white (*Colinus virginianus*) PR	+	A	+	C	C	+	+	+	+	+	+
Rallidae											
American coot (*Fulica americana*) WR	C	C	A	C							C
Charadriidae											
Killdeer (*Charadrius vociferus*)		U						U	U		
Scolopacidae											
Greater yellowlegs (*Tringa melanoleuca*)									A		
Laridae (Larinae)											

Table 1. Continued.

Species	Months										
	Jan	Feb	Mar	Apr	May	Jun	Aug	Sep	Oct	Nov	Dec
Ring-billed gull (*Larus delawarensis*) WR	C	C	C	C	C				C	C	C
Herring gull (*L. argentatus*) WR		C							C	C	
Columbidae											
Mourning dove (*Zenaida macroura*) PR, B	+	+	+	A	C	+	C	C	C	+	+
Cuculidae (Coccyzinae)											
Yellow-billed cuckoo (*Coccyzus americanus*)						1		1			
Cuculidae (Neomorphinae)											
Greater roadrunner (*Geococcyx californicus*)								1			
Caprimulgidae (Caprimulginae)											
Chuck-will's widow (*Caprimulgus carolinensis*)						2		1			
Apodidae (Chaeturinae)											
Chimney swift (*Chaetura pelagica*)				1				1			
Trochilidae											
Ruby-throated hummingbird (*Archilochus colubris*)					1						
Alcedinidae (Cerylinae)											
Belted kingfisher (*Ceryle alcyon*)								1	2		
Picidae (Picinae)											
Red-headed woodpecker (*Melanerpes erythrocephalus*) PR, B	C	C	C	C	C	C	C	C	C	C	C
Red-bellied woodpecker (*M. carolinus*) PR, B	C	C	C	C	C	C	C	C	C	C	C
Yellow-bellied sapsucker (*Sphyrapicus varius*)			1								1
Hairy woodpecker (*Picoides villosus*)	2						1				
Downy woodpecker (*P. pubescens*) PR	U	U	U	U	+	U	U	U	+	U	U
Northern flicker (*Colaptes auratus*) WR	U	U	U	1					1	U	U
Pileated woodpecker (*Dryocopus pileatus*) PR, B	U	U	U	U	U	U	U	U	+	+	U
Tyrannidae (Tyranninae)											
Eastern wood-pewee (*Contopus virens*) SR					U	U	U		U		
Eastern phoebe (*Sayornis phoebe*)		2	2								
Great crested flycatcher (*Myiarchus crinitus*)						1		1			
Western kingbird (*Tyrannus verticalis*)					U	U					
Eastern kingbird (*T. tyrannus*) SR, B				U	U	U	U				
Scissor-tailed flycatcher (*T. forficatus*) SR, B			C	C	C	C	A	C			
Hirundinidae											
Northern rough-winged swallow (*Stelgidopteryx serripennis*) M	A	A									
Barn swallow (*Hirundo rustica*) SR					A	A	A	A			
Corvidae											
Blue jay (*Cyanocitta cristata*) PR, B	C	C	C	C	C	C	C	C	C	C	C
American crow (*Corvus brachyrhynchos*) PR	C	C	C	C	C	C	C	C	C	C	C
Paridae											
Tufted titmouse (*Parus bicolor*) PR, B	A	A	A	A	A	A	A	VA	A	A	A
Carolina chickadee (*P. carolinensis*) PR, B	A	A	A	A	A	A	A	VA	A	A	A
Sittidae											

Table 1. Continued.

Species	Months										
	Jan	Feb	Mar	Apr	May	Jun	Aug	Sep	Oct	Nov	Dec
White-breasted nuthatch (*Sitta carolinensis*) WR	U	U	U					U		U	
Red-breasted nuthatch (*S. canadensis*) WR		U	U							C	U
Certhiidae											
Brown creeper (*Certhia americana*) WR	U	U	U								
Muscicapidae (Sylviinae)											
Golden-crowned kinglet (*Regulus satrapa*) M	C										
Muscicapidae (Turdinae)											
Eastern bluebird (*Sialia sialis*) PR	+	C	C	C	C	C	+	C	+	+	+
Hermit thrush (*Catharus guttatus*) M	1	2	1								
Wood thrush (*Hylocichla mustelina*)						1					
American robin (*Turdus migratorius*) PR	C	C	C	C	C	C	C	C	C	+	C
Mimidae											
Northern mockingbird (*Mimus polyglottos*) SR, B		C	C	C	C	C					
Brown thrasher (*Toxostoma rufum*)	U		U								
Laniidae											
Loggerhead shrike (*Lanius ludovicianus*)		1		1				1			
Sturnidae											
European starling (*Sturnus vulgaris*)		U	U		U			U			
Vireonidae (Vireoninae)											
Yellow-throated vireo (*Vireo flavifrons*)				1							
Bell's vireo (*V. bellii*)								1			
Red-eyed vireo (*V. olivaceus*)								1			
Emberizidae (Parulinae)											
Yellow warbler (*Dendroica petechia*) M		U	U				U		C		
Yellow-rumped warbler (Myrtle) (*D. coronata*)			C	C					C		
Yellow-throated warbler (*D. dominica*)								1			
Pine warbler (*D. pinus*) M				1							
Common yellowthroat (*Geothlypis trichas*)					1						
Emberizidae (Thraupinae)											
Scarlet tanager (*Piranga olivacea*)					2						
Emberizidae (Cardinalinae)											
Northern cardinal (*Cardinalis cardinalis*) PR, B	C	C	C	C	C	C	C	C	C	+	+
Painted bunting (*Passerina ciris*)					1						
Emberizidae (Emberizinae)											
Dark-eyed junco (*Junco hyemalis*) WR	C	C	C							C	C
Vesper sparrow (*Pooecetes gramineus*)				3							
Song sparrow (*Melospiza melodia*)										2	
Swamp sparrow (*M. georgiana*)	1										
Emberizidae (Icterinae)											
Red-winged blackbird (*Agelaius phoeniceus*) SR			U	U	U	U					
Eastern meadowlark (*Sturnella magna*) PR	+	U	U	U	U	U	+	+	U	U	+
Brown-headed cowbird (*Molothrus ater*) SR			U	U	U	U					
Great-tailed grackle (*Quiscalus mexicanus*)			U	U							
Common grackle (*Quiscalus quiscula*) SR			U	U	U	U					
Orchard oriole (*Icterus spurius*) SR					1	1	2	1			

Table 1. Continued.

Species	Months										
	Jan	Feb	Mar	Apr	May	Jun	Aug	Sep	Oct	Nov	Dec
Northern oriole (Baltimore) (*I. galbula*)			2					2			
Fringillidae											
Pine siskin (*Carduelis pinus*)		A									
American goldfinch (*C. tristis*)			A								
Ploceidae											
House Sparrow (*Passer domesticus*)						4					

Symbols used:
U = Uncommon; fewer than five sightings on any day during that month. Observed two or more days during that month.
C = Common; five to 15 sightings on any day during that month.
A = Abundant; more than 15 sightings on any day during that month.
VA = Very abundant; fifty or more sightings on any day during that month.
Numerals = actual numbers of birds seen on days observed. Observed only on one day during that month.
+ = Not observed within the study area, but seen within 15 km during that month.
PR = Permanent resident.
SR = Summer resident.
WR = Winter resident.
M = Observed only during fall and/or spring migrations.
B = Known to breed within the community.

around Pat Mayse Lake. Most of the lakeshore is steep, so that only a very limited area of mudflat is exposed at the lowest water level.

During the spring and fall migrations, fewer species were observed than were expected. The unusually erratic weather during the spring and fall of 1986 seemed to disturb the normal migration patterns throughout all of northeastern Texas.

Bald eagles (*Haliaeetus leucocephalus* Pallas) were observed several times during the winter months. While there is no evidence of their remaining as year-round residents, some eagles are known to over-winter on Pat Mayse Lake each year. Two adult and four immature eagles were seen on February 11, 1986.

The mixed forest environment provides an excellent habitat for woodpeckers. A total of seven species were observed, four of these being recorded as permanent residents. In the intensively studied area, four nesting pairs of red-headed woodpeckers [*Melanerpes erythrocephalus* (Linneaus)] and two nesting pairs of pileated woodpeckers [*Dryocopus pileatus* (Linneaus)] were seen. Nesting cavities were not located, but newly fledged young were observed with each pair over a period of about three weeks.

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SHORT COMMUNICATIONS

Status of the Red-cockaded Woodpecker in Texas, 1985–1987

Brent Ortego,[1] Richard N. Conner,[2] and Craig Rudolph[2]

[1]Texas Parks and Wildlife Department, 1342 South Wheeler, Jasper, Texas 75951
[2]U.S.D.A. Forest Service, Southern Forest Experiment Station,
P.O. Box 7600 SFA, Nacogdoches, Texas 75962

The Red-cockaded Woodpecker (*Picoides borealis*) was once a common species across the Southeastern United States. The species is specialized to live in old growth, open, park-like stands of pine. As the virgin pine forests in Texas were harvested, Red-cockaded Woodpecker populations declined (Hooper et al. 1980).

In 1968, the Texas Parks and Wildlife Department began monitoring the species because it was recognized as being scarce. Reports were available from only nine of the 40 counties of its original range in Texas (Lay 1969). In 1970 it was listed as an endangered species in the United States. Since then, much research has been conducted on this species in Texas and across the Southeast (Conner and Locke 1979, 1982, 1983; Hooper et al. 1980; Jackson 1971, 1978; Jackson et al. 1978, 1986; Johnson 1971; Kroll et al. 1980; Lay and Russell 1970; Lay et al. 1971; Lay and Swepston 1975; Lennartz et al. 1983a, b; Lennartz and Henry 1985; Ligon et al. 1986; Locke 1980; Locke et al. 1983; Shaw 1971; Thompson and Baker 1971; Thompson 1976).

By 1975, Texas Parks and Wildlife Department personnel located 31 Red-cockaded Woodpecker colonies on private land. During 1985, 1986, and 1987, these colonies were resurveyed to determine their status as viable breeding colonies. As time permitted new reports of active colonies were investigated and verified. During 1985 and 1986, intensive surveys were conducted in two of three state forests and three of four national forests known to contain Red-cockaded Woodpecker colonies. All active colonies located by this effort are listed as confirmed in Table 1. Reputable reports of active colonies in forests not personally surveyed by us are listed as unconfirmed.

We located 79 active Red-cockaded Woodpecker colonies. Reputable reports indicated that there are an additional 133 active colonies in Texas for a total of 212 colonies (Table 1). These colonies are distributed over 13 counties in south-

Table 1. Active Red-cockaded Woodpecker colonies in Texas, 1985–1987.

County	Ownership	Confirmed	Unconfirmed	Total
Angelina	Private	0	1	1
	State	0	0	0
	Federal	1	0	1
		1	1	2

Table 1. Continued.

County	Ownership	Confirmed	Unconfirmed	Total
Cherokee	Private	0	0	0
	State	7	0	7
	Federal	0	0	0
		7	0	7
Hardin	Private	0	1	1
	State	0	0	0
	Federal	0	0	0
		0	1	1
Houston	Private	0	0	0
	State	0	0	0
	Federal	25	0	25
		25	0	25
Jasper	Private	4	0	4
	State	0	0	0
	Federal	14	0	14
		18	0	18
Montgomery-Walker	Private	0	1	1
	State	0	10	10
	Federal	0	85	85
		0	96	96
Newton	Private	8	0	8
	State	0	0	0
	Federal	0	0	0
		8	0	8
Polk	Private	1	1	2
	State	0	0	0
	Federal	1	0	1
		2	1	3
Sabine	Private	0	0	0
	State	1	0	1
	Federal	6	0	6
		7	0	7
San Augustine	Private	0	0	0
	State	0	0	0
	Federal	7	0	7
		7	0	7
San Jacinto	Private	0	0	0
	State	0	0	0
	Federal	0	27	27
		0	27	27
Shelby	Private	0	0	0
	State	0	0	0
	Federal	1	0	1
		1	0	1
Trinity	Private	1	7	8
	State	0	0	0
	Federal	2	0	2
		3	7	10
Grand total	Private	14	11	25
	State	8	10	18
	Federal	57	112	169
		79	133	212

eastern Texas. Three counties (Montgomery, San Jacinto and Walker) contain 58 percent of the colonies.

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Texas Bird Records Committee Report for 1987

Greg W. Lasley

305 Loganberry Court, Austin, Texas 78745

This report will bring the reader up to date with the actions of the Texas Bird Records Committee (hereafter TBRC) from 1977 through 1987. Arnold (1984, 1985) has published information concerning TBRC decisions during 1984 and 1985. Those decisions will not be repeated in the present report. In addition, this report will explain changes the TBRC has worked on during 1987 and early 1988 in order to clarify for field observers which species should be documented and submitted to the TBRC for consideration.

The TBRC established a set of written Bylaws for the first time during early 1988. These Bylaws have since been accepted by the TOS Board of Directors. Copies of these Bylaws are available upon request. The Bylaws call for the establishment of a Review List of Species: any record of a species on that list must be reviewed by the TBRC before the record can be accepted. In general, the Review List consists of species that have occurred an average of four or fewer times per year in Texas (over the past ten years), but in some cases the TBRC has voted to add a species to the Review List because of difficult identification problems or for other reasons.

Before 1988 the TBRC did not act on records that were submitted to the Texas Photo Record File at Texas A&M University, so this report does not deal with records that were submitted by photo documentation only during the 1977–1987 period. It is important to recogize that several species were added to the Texas Checklist by photo documentation during those years. [See Arvin (1980), Lasley et al. (1982), Lasley and Pincelli (1986), Morgan and Feltner (1985), Morgan et al. (1985), and TOS (1984) for other details.] Beginning with 1988, however, all records of Review Species and new state records, whether sight records, photographed records or specimens, will be reviewed by the TBRC and the results will be published in an annual report similar to this one.

This report officially adds Western Gull and Sulphur-bellied Flycatcher to the Texas Checklist, bringing the state total to 561 species at the end of 1987. There are several currently accepted species included in that total, however, that may be unacceptable after additional TBRC consideration.

The Bylaws call for the TBRC to review all records of the Review Species, but also allow for any TBRC member to ask the committee to review any record of

any species that appears particularly significant to a certain region of Texas. Prior to 1987 the TBRC sometimes reviewed records of species that were not particularly significant. The present report covers only species on the current Review List. Beginning with the 1988 report all TBRC actions during the reported year will be published.

Review List. The Review List below is in its early stages and there may be some changes during the next few years. We hope that this list will become relatively stable in a very short time. We welcome reports of the following:

Red-throated Loon
Arctic/Pacific Loon
Red-necked Grebe
Clark's Grebe
Yellow-nosed Albatross
Cory's Shearwater
Greater Shearwater
Sooty Shearwater
Manx Shearwater
Audubon's Shearwater
Wilson's Storm-Petrel
Leach's Storm-Petrel
Band-rumped Storm-Petrel
Red-billed Tropicbird
Blue-footed Booby
Brown Booby
Red-footed Booby
Glossy Ibis
Jabiru
Greater Flamingo
Brant
Muscovy Duck
American Black Duck
White-cheeked Pintail
Garganey
Eurasian Wigeon
Barrow's Goldeneye
Masked Duck (only post-1980 records)
Snail Kite
Common Black-Hawk (only records outside of Jeff Davis Co.)
Northern Goshawk
Roadside Hawk
Aplomado Falcon
Paint-billed Crake
Spotted Rail
Double-striped Thick-Knee
Northern Jacana (only post-1980 records)
Eskimo Curlew
Surfbird
Purple Sandpiper
Curlew Sandpiper
Ruff
Pomarine Jaeger
Parasitic Jaeger
Long-tailed Jaeger
Little Gull
Common Black-headed Gull
Heermann's Gull
California Gull
Thayer's Gull
Lesser Black-backed Gull
Western Gull
Glaucous Gull
Great Black-backed Gull
Sabine's Gull
Elegant Tern
Roseate Tern
Arctic Tern
Brown Noddy
Black Noddy
Ruddy Ground-Dove
Mangrove Cuckoo
Snowy Owl
Northern Pygmy-Owl
Mottled Owl
Spotted Owl
Northern Saw-whet Owl
White-collared Swift
Green Violet-ear
Broad-billed Hummingbird
White-eared Hummingbird
Rufous-tailed Hummingbird
Antillean Crested Hummingbird
Costa's Hummingbird
Allen's Hummingbird
Elegant Trogon
Lewis' Woodpecker
Williamson's Sapsucker
Ivory-billed Woodpecker
Greenish Elaenia
Greater Pewee
Dusky-capped Flycatcher
Tropical Kingbird
Thick-billed Kingbird
Gray Kingbird
Fork-tailed Flycatcher
Sulphur-bellied Flycatcher
Rose-throated Becard
Gray-breasted Martin
Clark's Nutcracker
Black-billed Magpie
American Dipper
Clay-colored Robin
Rufous-backed Robin
Varied Thrush
Aztec Thrush
Bohemian Waxwing
Gray Silky-flycatcher
Black-whiskered Vireo
Yellow-green Vireo

Yucatan Vireo
Connecticut Warbler
Gray-crowned Yellowthroat
Red-faced Warbler
Golden-crowned Warbler
Rufous-capped Warbler
Crimson-collared Grosbeak
Blue Bunting
Golden-crowned Sparrow
Snow Bunting
Black-vented Oriole
Pine Grosbeak
White-winged Crossbill
Common Redpoll

The TBRC also reviews any record of a species not yet on the state list.

TBRC Membership.—All documentation should be sent to Lasley at the above address. As of August 1988, the TBRC was: Keith Arnold, Chairman, Greg Lasley, Secretary, John Arvin, Ted Eubanks, Jim Morgan, Warren Pulich, Sr., Ken Seyffert, and Frances Williams. Former members who participated in some of the below decisions are: Victor Emanuel, T. Ben Feltner, and Charles D. Fisher.

Format.—Each record includes the date, location and TBRC file number. A TPRF number (Texas Photo Record File at Texas A&M University) number is included where applicable. All locations in *italics* indicate counties. All observers who supplied written documentation or photos are credited. Many photographers submit written descriptions along with their photos, a practice we strongly encourage. If the observer who first found or identified the bird provided documentation their initials are listed first.

Contributors.—The following contributors submitted descriptions or photos of Review List species that were reviewed during the 1977–1987 period covered by this report. Names of contributors who submitted reports during 1984–1985 and already published by Arnold (1984, 1985) are not listed here. Peggy Acord, Richard Albert, Robert Arbib, David Arbour, John Arvin, Mike Austin, Alma Barrera, Bob Barth, Anne Bellamy (ABe), Charles Bender, Albert Bivings, David Blankinship, Mark Blauer, A. Buckley, Dorothy Burr, Sheriton Burr, Peter Canth, Charlie Clark, Ralph Clearman, Steve Clearman, Sumner Dana (SDa), Sandy Dillard, Joyce Dolch (JDol), Jeff Donaldson (JDon), Gladys Donohue, Ellen Dunaway, Charles Easley, Victor Emanuel, Ted Eubanks, Jean Evans, T. Ben Feltner, David Ferry, Thelma Fox, Brush Freeman, Leo Galloway, Carolyn Gritzmaker, Adele Harding, Steve Hawkins, Mitch Heindel, Kelly Himmel, Jean Hoffman, Edwin Hoopes, Alan Hunt, Erma Kibler (EKi), Kirke King, Nancy Krosley, Ed Kutac, Becky Lasley, Greg Lasley, Keith Lockhart, Mark Lockwood, Donna Lustoff, William Lybarger, Duncan MacLulich, Donald Martin, Kay McCracken, Jody Miller, W. Moore, Jim Morgan (JMo), John Muldrow (JMu), Patti Munzy, Donald Myers, Andy O'Neil, Craig Patterson, Jan Pierson, Randy Pinkston, Bryant Pomrenke (BPo), Charles Potter, Bill Pulliam (BPu), Scott Rea, Arthur Richard, Hanna Richard, Linda Roach, Rena Ross, John Rowlett, Tom Schulenberg, Peter Scott, Willie Sekula, Chuck Sexton, Ken Seyffert, Shirley Shead, John Sproul, Thomas Tacha, Verda Teale, Jack Tryer, Guy Tudor, Bettye Vernon, George Wagner, Sally Weeks, Bret Whitney, Frances Williams, Andrew Wood, and Barry Zimmer.

Acknowledgments.—The TBRC is grateful to the many contributors listed above, without whom this report would not be possible. We would also like to thank the following consultants who provided useful information to the TBRC concerning

several records: Laurence Binford, Jon Dunn, Joseph R. Jehl, Jr., Paul Lehman, and Dennis Paulson. Keith Arnold, Chuck Sexton, Ken Seyffert, and Frances Williams made helpful comments on early drafts of this article.

Accepted Records

All records pertain to one individual unless otherwise indicated.

RED-THROATED LOON (*Gavia stellata*)

1977—24 Nov, Lake Theo, *Briscoe* (KS, TBRC #1978-3).

RED-NECKED GREBE (*Podiceps auritus*)

1977—5 Nov, Lake Fairfield, *Freestone* (PC, TBRC #1978-4).

BROWN BOOBY (*Sula leucogaster*)

1975—30 Aug, off Port Aransas, *Nueces* (RC, SC, TBRC #1977-8).

JABIRU (*Jabiru mycteria*)

1981—6–18 Sep, Oso Bay, Corpus Christi, *Nueces* (BB, DF, CC, TBRC #1981-6, TPRF #251).

BRANT (*Branta bernicla*)

1982—6 Mar, Cartwright Ranch near Dinero, *Live Oak* (SH, SDa, JE, TBRC #1982-7).

RUFF (*Philomachus pugnax*)

1977—14 Feb–24 Mar, Galveston Is., *Galveston* (TBF, JT, TBRC #1977-6).
1986—24 Jul–21 Dec, Mitchell Lake, San Antonio, *Bexar* (MH, WS, TBRC #1986-4, TPRF #409). What is presumed to be the same bird returned 25 Jul–24 Nov 87.

LITTLE GULL (*Larus minutus*)

1986/1987—adult. 22 Dec–21 Feb, Lake Ray Hubbard, *Dallas/Kaufman* (KL, JMu, TBRC #1987-5, TPRF #572).
1987—adult. 21 Jan, Granger Lake, *Williamson* (GL, JA, TBRC #1987-6).

CALIFORNIA GULL (*Larus californicus*)

1986—adult. 21 Dec, Sabine Pass, *Jefferson* (TS, TBRC #1987-4).

THAYER'S GULL (*Larus thayeri*)

1986—imm. 8–9 Nov, San Luis Pass, *Galveston* (JMo, TE, GL, TBRC #1987-2, TPRF #515).

WESTERN GULL (*Larus occidentalis*)

1986—adult. 14 May, Ft. Bliss, *El Paso* (BZ, JDon, ph. TBRC #1987-3, TPRF #514). This record represents the first for Texas.

SABINE'S GULL (*Xema sabini*)

1976—imm. 26 Sep, Iowa Park, *Wichita* (EKi, TBRC #1977-1).
1977—imm. 1 Oct, Port Aransas, *Nueces* (BV, TBRC #1978-11).

RUDDY GROUND-DOVE (*Columbina talpacoti*)

1986—14–21 Nov (1–2 birds), Anzalduas Park, *Hidalgo* (JDol, GL, SW, GW, CC, TBRC #1986-5, TPRF #407).

BROAD-BILLED HUMMINGBIRD (*Cynanthus latirostris*)

1985—female. 11 Dec 85–12 Feb 86, Santa Ana NWR, *Hidalgo* (BW, JP, JH, TBRC #1986-6).

THICK-BILLED KINGBIRD (*Tyrannus crassirostris*)

1986—29 May–2 Sep, Rio Grande Village, Big Bend Nat. Park, *Brewster* (ABe, PS, CE, GL, TBRC #1986-7, TPRF #392). Another (or the same?) individual was at same location in 1985. See TPRF #358.

SULPHUR-BELLIED FLYCATCHER (*Myiodynastes luteiventris*)

1975—(nesting pair) 7 May–16 Jul, Santa Margarita Ranch, *Starr* (JA, TBRC #1978-9). The pair returned 8 May–11 Jul 76 and were seen again 30 Jul 77. This represents the first record for Texas.

AMERICAN DIPPER (*Cinclus mexicanus*)

1986—12 Mar, Big Bend Nat. Park, *Brewster* (BPu, TBRC #1986-8).

CLAY-COLORED ROBIN (*Turdus grayi*)

1980—24 Feb, Brownsville, *Cameron* (GL, BL, AB, TBRC #1980-4).

VARIED THRUSH (*Ixoreus naevius*)

1979—18 Feb–21 Mar, Idalou, *Lubbock* (ED, TBRC #1979-2). 1981/1982—male. 7 Dec–10 Jan, Big Bend Nat. Park, Brewster (BPo, GL, BL, TBRC #1982-1).

RUFOUS-CAPPED WARBLER (*Basileuterus rufifrons*)

1973—10 Feb, below Falcon Dam, *Starr* (VE, JR, TBRC #1977-9). This record represented the first for Texas.

GOLDEN-CROWNED SPARROW (*Zonotrichia atricapilla*)

1976/1977—12–18 Nov & 1 Jan, Amarillo, *Potter* (RR, PA, TBRC #1977-4).

COMMON REDPOLL (*Carduelis flammea*)

1965/1966—25 Nov–16 Jan (6 birds) Buffalo Lake NWR, *Randall* (KS, LG, PA, TF, TBRC #1978-2).
1977—27 Nov, Wolf Creek Park, *Ochiltree* (KS, TBRC #1978-1).
The above two records represent the only accepted records for Texas.

Unaccepted Records

A number of factors may contribute to a record being denied acceptance. It is rather uncommon for a record to not be accepted because the bird was obviously misidentified. More often, a record may be denied acceptance because the information provided to the TBRC was not sufficient to document the reported occurrence.

Cory's Shearwater

27 Sep 75, off Port Aransas, *Nueces* (#1977-13).

Greater Shearwater

30 Aug 75, off Port Aransas, *Nueces* (#1977-12).

Sooty Shearwater

25 Aug 78, off Port Aransas, *Nueces* (#1978-18).

Band-rumped Storm-Petrel

12 Jul 74, off Galveston, *Galveston* (#1987-9).

Glossy Ibis

6 Jun 86, San Antonio, *Bexar* (#1986-6).

Muscovy Duck

14 Sep 86, below Falcon Dam, *Starr* (#1987-10).
21 Nov 86 (3 birds), Salineno, *Starr* (#1987-11).
The current status of this species in Texas has not yet been reviewed by the TBRC.

American Black Duck

9 Oct 77, Lubbock, *Lubbock* (#1977-7).

Northern Goshawk

3 Apr 82, Santa Ana NWR, *Hidalgo* (#1982-3).
16 Mar 86, Alice, *Jim Wells* (#1987-12).

Common Black-Hawk

18 Apr 78, *Hays* (#1978-15).

Roadside Hawk

3 Oct 82, Santa Ana NWR, *Hidalgo* (#1986-10).

Short-tailed Hawk

10 Apr 77, Mission, *Hidalgo* (#1979-4).
24 Sep 79, Mission, *Hidalgo* (#1979-3).
25 Feb 81, Mission, *Hidalgo* (#1982-6).
12 Sep 81, Mission, *Hidalgo* (#1982-5).
20 Dec 81, Anzalduas Park, *Hidalgo* (#1982-4).

Laughing Falcon

21 Feb 86, *Hidalgo* (#1987-13).

Aplomado Falcon

12 Apr 86, *Uvalde* (#1986-11).

Spotted Rail

18 Feb 78, Big Bend Nat. Park, *Brewster* (#1978-12).

Common Crane

10 Jan 79, Brownfield, *Terry* (#1980-6).

Wandering Tattler

30 Mar 82, Fulton Beach, *Aransas* (#1982-9).

Eskimo Curlew

7 May 81 (23 birds), Atkinson Island, *Chambers* (#1981-2).

Curlew Sandpiper

7 Jun 86, Laguna Atascosa NWR, *Cameron* (#1986-13).

Long-tailed Jaeger

14 Jul 77, Hemstead, *Waller* (#1977-11).

California Gull

2 May 87 (2 birds), Amarillo, *Randall* (#1987-14).

Thayer's Gull

23 Apr 80, Bolivar Flats, *Galveston* (#1981-9).
15 Mar 81, San Antonio, *Bexar* (#1981-3).

Bridled Tern

20 Sep 85, Padre Island, *Cameron* (#1986-14).

Blue Ground-Dove

20 Jul 86, Santa Margarita Ranch, *Starr* (#1986-15).

Antillean Nighthawk

11 May 86, Padre Island, *Kleberg* (#1987-15).

Allen's Hummingbird

4 Feb 77, Corpus Christi, *Nueces* (#1977-19).

Elegant Trogon

4 Oct 75, Bentsen S.P., *Hidalgo* (#1977-15).

Dusky-capped Flycatcher

4 Jun 86, Candelaria, *Presidio* (#1986-16).

Thick-billed Kingbird
18 Apr 78, Pedernales Falls S.P., *Blanco* (#1978-16).

Gray-collared Becard
12 May 86, San Antonio, *Bexar* (#1987-16).

Rufous Piha
19 Apr 86, Laguna Atascosa NWR, *Cameron* (#1987-17).

Black-capped Chickadee
Nov 85, *Dallas* (#1986-17).

Yellow-green Vireo
19 Sep 76, *Kerr* (#1977-2).

Gray-crowned Yellowthroat
2 Nov 86, Bentsen S.P., *Hidalgo* (#1987-18).

Rufous-winged Sparrow
31 Jan 85, Big Bend Nat. Park, *Brewster* (#1986-18).

Yellow-eyed Junco
22 Dec 80, Guadalupe Mountains N.P., *Culberson* (#1981-5).

Snow Bunting
15 Dec 79, Floydada, *Floyd* (#1980-5).

Melodious Blackbird
13 Apr 86, Austin, *Travis* (#1987-20).

Common Redpoll
18–19 Feb 78, Commerce, *Hunt* (#1978-13).

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Recent Articles about Texas Birds

Karen L. P. Benson

Department of Wildlife and Fisheries Sciences, Texas A&M University,
College Station, Texas 77843

—1987—

Bolen, E. G. 1987. A specimen record of the Barnacle Goose in Texas. Southwestern Nat. 32(4):506–507. Probable wild bird was killed 12 January 1986 in Panhandle.

Boydstun, C. P., and C. A. DeYoung. 1987. Nesting success of White-Tipped Doves in South Texas. J. Wildl. Manage. 51(4):791–793. Provides baseline information on reproductive success.

Bryan, K., R. Moldenhauer, and D. E. Kroodsma. 1987. Geographic uniformity in songs of the Prothonotary Warbler. Wilson Bull. 99(3):369–376. Found that a given Texas song was no more likely to be similar to another Texas song than to a song from distant portions of eastern North America. This lack of broad geographic variation is unusual in oscine songs.

Burnside, F. L. 1987. Long-distance movements by Loggerhead Shrikes. J. Field Ornith. 58(1):62–65. Found that of 151 banded shrikes recovered in the U.S. and Canada during the period 1923–1983, 19 had moved 100 km or more; 8 of these recoveries were in Texas.

Burt, D., D. B. Burt, T. C. Maxwell, and R. C. Dawkins. 1987. First records of the Flammulated Owl (*Otus flammeolus*) in the central Trans-Pecos of Texas. Tx. J. Sci. 39(3):293–294. One bird was captured and banded on 14 September 1986 in Madera Canyon, Jeff Davis County; another was collected in Brewster County on 19 April 1987.

Burt, D. B., D. Burt, T. C. Maxwell, and D. G. Tarter. 1987. Clapper Rail (*Rallus longirostris*) in west-central Texas. Tx. J. Sci. 39(4):378. First reported occurrence of a Clapper Rail inland from the coastal plain of Texas.

Cain, J. R., R. J. Lein, and S. L. Beasom. 1987. Phytoestrogen effects on reproductive performance of Scaled Quail. J. Wildl. Manage. 51(1):198–201. Concluded that plant-source estrogen compounds in the diet play no significant role in reproductive success of this quail.

Carter, M. D. 1987. An incident of brood parasitism by the Verdin. Wilson Bull. 99(1):136. Describes a Northern Mockingbird nest containing 2 Bronzed Cowbird eggs and a Verdin egg in Hidalgo County, Texas.

Conner, R. N., and K. A. O'Halloran. 1987. Tree cavity selection by Red-cockaded Woodpeckers as related to growth dynamics of southern pines. Wilson Bull. 99(3):398–412. Found that cavity trees had undergone a period of suppressed growth after which they were released by some type of thinning. The authors suggest that shelterwood cutting, a harvest technique which can produce the suppression and release phenomenon observed, be used instead of clear-cutting in areas around Red-cockaded Woodpecker colonies in order to provide a sustained supply of cavity trees.

Custer, T. W., and C. A. Mitchell. 1987. Organochlorine contaminants and

reproductive success of Black Skimmers in South Texas, 1984. J. Field Ornith. 58(4):480–489. Determined that DDE concentrations in eggs were lower in 1984 than in eggs from same colony during 1979–1981.

Demarais, S., D. D. Everett, and M. L. Pons. 1987. Seasonal comparison of endoparasites of Northern Bobwhites from two types of habitat in southern Texas. J. Wildl. Dis. 23(2):256–260. Indicates that although prevalence of nematode infection in bobwhites varied with month and locality, endoparasites probably have little effect on fluctuation in bobwhite populations.

Flickinger, E. L., and A. J. Krynitsky. 1987. Organochlorine residues in ducks of playa lakes of the Texas Panhandle and eastern New Mexico. J. Wildl. Dis. 23(1):165–168. Found that it was unlikely that contaminants contributed to winter duck mortality during 1981–1983. Suggests that deaths were primarily due to avian cholera.

Flickinger, E. L., and C. M. Bunck. 1987. Number of oil-killed birds and fate of bird carcasses at crude oil pits in Texas. Southwestern Nat. 32(3):377–381. Found that frequent counts may give erroneously high numbers because carcasses persist on surface and old carcasses may resurface.

Garcia, C. A., and A. G. Canaris. 1987. Metazoan parasites of *Recurvirostra americana* Gmelin (Aves), from southwestern Texas and Monte Vista NWR, Colorado, with a checklist of helminth parasites hosted by this species in North America. Southwestern Nat. 32(1):85–91. Nineteen species of helminth parasites and 6 species of ectoparasites were recovered from 33 American Avocets.

Gehlbach, F. R. 1987. Natural history sketches, densities and biomass of breeding birds in evergreen forests of the Rio Grande, Texas, and Rio Corona, Tamaulipas, Mexico. Tx. J. Sci. 39(3):241–251. Presents comparative aspects of life history for 24 breeding species at the Rio Grande and 40 at the Rio Corona.

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NOTES AND NEWS

ATTENTION AUTHORS.—The *Bulletin of the Texas Ornithological Society* is a semi-annual journal which publishes research reports and short communications in the field of ornithology. Articles on a wide range of subjects are accepted, including documentation of new Texas records, interpretations of laboratory and field studies, historical perspectives on Texas ornithology, and developments in theory and methodology. Although the emphasis is on Texas birds, the *Bulletin* accepts papers which advance the knowledge of birds in general. Original articles, reports and other items submitted for inclusion in the *Bulletin* should be sent to the editor, Robert Benson, Department of Engineering Technology, Texas A&M University, College Station, Texas 77843.

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Department of Engineering Technology
Texas A&M University
College Station, Texas 77843

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Texas A&M University
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